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PEOPLE'S REPUBLIC OF CHINA

EX PARTE OR LATE FILED

JEFFREY H. OLSON  
COMMUNICATIONS COUNSEL  
(202) 223-7326

April 25, 1995

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

RECEIVED

APR 25 1995

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

EX PARTE FILING  
PR Docket 92-235

Dear Mr. Secretary:

On behalf of Nippon Telegraph & Telephone Corporation ("NTT"), this letter is written as a follow-up to our March 23, 1995, meeting with members of the Commission's staff, in which we discussed the favorable reactions that NTT received both from manufacturers and users following its recent demonstrations of a prototype 5 kHz RZ<sup>®</sup> SSB mobile unit.<sup>1/</sup> This letter also responds to certain ex parte filings submitted to the Commission recently by the Associated Public-Safety Communications Officers ("APCO") in the above-referenced proceeding.

As reported in ex parte comments that NTT submitted to the Commission earlier this year, NTT conducted live mobile demonstrations of a prototype RZ<sup>®</sup> SSB 5 kHz mobile unit in Washington, D.C., in February 1995,<sup>2/</sup> and in Denver, Colorado, in March 1995.<sup>3/</sup> The Denver demonstration was conducted in conjunction with the APCO Western Regional show and was attended by representatives of a number of manufacturers and user groups.

<sup>1/</sup> See Letter from Jeffrey H. Olson to William Caton, dated March 23, 1995.

<sup>2/</sup> See Letters from Jeffrey H. Olson to William Caton, dated February 13, 1995, and February 14, 1995.

<sup>3/</sup> See n.1 supra.

Mr. William F. Caton  
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Attached hereto are letters from various manufacturers<sup>4/</sup> and users<sup>5/</sup> who attended one of the demonstrations, expressing their assessment of the RZ® SSB technology. The letters are representative of many other favorable comments and expressions of interest that NTT received during the demonstrations. Also attached hereto (as Appendix C) is a letter from Dr. Gregory M. Stone, Co-Chairman of TIA TR-8, Technology Compatibility WG 8.8, in which Dr. Stone: (1) concludes that RZ® SSB is "a viable bandwidth efficient linear technology for use in the land mobile arena"; and (2) "formally request[s] NTT's regular participation" in the relevant TIA proceedings. Finally, we attach (as Appendix D) an article on the Washington, D.C., demonstration that appeared in the February 10, 1995 issue of Land Mobile Radio News.

NTT's efforts to demonstrate the viability of RZ® SBB -- and the universally favorable response to those efforts -- stand in sharp contrast to the unsubstantiated assertions of those parties that oppose the adoption of a narrowband channel plan, or at least seek to delay its implementation for decades. For example, on November 16, 1994, and March 21, 1995, APCO filed ex parte comments criticizing those who favor the early adoption of a narrowband channel plan. As is demonstrated below, APCO's views are simply not supported by any available scientific or other reliable evidence, and are contradicted by the undisputed facts.

In its November 16, 1994, ex parte filing, APCO expressed seven reasons for "public safety users opposition to 5 kHz channel spacing." On January 18, 1995, Linear Modulation Technology Limited ("LMT") submitted a "Supplement" to its earlier comments in this rulemaking, correctly demonstrating the many errors in APCO's submission. NTT supports the views expressed in LMT's Supplement, and adds the following points regarding each of the issues raised in APCO's November 16, 1994, ex parte filing.

---

<sup>4/</sup> SCL/Midland, Maxon Engineering, Stanilite, and Standard Communications. See Appendix A.

<sup>5/</sup> Including representatives from the Los Angeles Police Department; Nevada Highway Patrol; City of Berkeley, California; City of Mesa, Arizona; and the Utilities Telecommunications Council. See Appendix B.

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1. Field testing. APCO claims that 5 kHz technology has not been "fully field-tested" and "proven capable of performing the necessary functions." On the contrary, 5 kHz RZ<sup>®</sup> SSB technology has undergone extensive testing both in the laboratory and the field. Data gathered during such field tests, which shows the excellent performance of RZ<sup>®</sup> SSB, has been presented on several occasions to the Commission. The recent live mobile demonstrations, one of which was conducted at the APCO Western Regional conference, proved that RZ<sup>®</sup> SSB is fully capable of very high quality transmission of both analog and digital voice, as well as high-speed data. APCO has never even attempted to contradict NTT's showings.
2. Performance. APCO further asserts that reduced channel bandwidth invariably leads to reduced performance. To the contrary, both laboratory and field tests have demonstrated that 5 kHz RZ<sup>®</sup> SSB has performance that is equal or superior to 12.5 kHz FM systems. Again, APCO has never even attempted to contradict NTT's showings. Moreover, as the attached correspondence reveals, independent observers who have witnessed demonstrations of the prototype 5 kHz RZ<sup>®</sup> SSB mobile unit have been extremely impressed with its performance for voice, data, and facsimile.
3. Encryption. APCO makes the baseless assumption that 5 kHz technology may not be adapted to encryption. However, 5 kHz RZ<sup>®</sup> SSB technology is fully capable of high quality digital voice and, therefore, is readily adaptable to encryption at a very low bit error rate.
4. Range. APCO made an unsupported assertion that 5 kHz equipment would have reduced range and require more repeaters. While this may be true for narrowband FM systems compared to existing FM systems, this assertion is not true for RZ<sup>®</sup> SSB (and, perhaps, other narrowband modulation techniques as well). In fact, preliminary field tests have indicated that RZ<sup>®</sup> SSB exhibits excellent range, with graceful degradation of an analog voice signal at the edges of the service area.

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5. Interoperability is possible. APCO claims that 5 kHz equipment is not interoperable with FM equipment. However, equipment embodying narrowband modulation techniques, such as 5 kHz RZ<sup>®</sup> SSB, can be made compatible with existing or proposed FM equipment. The marketplace can and will provide multimodal equipment -- capable of handling two or more modulation schemes in the same radio -- in the future regardless of the channelization scheme adopted by the Commission. The adoption of a 5 kHz channelization scheme would therefore not pose insurmountable -- or even difficult -- compatibility problems, contrary to APCO's baseless suggestions.

Indeed, by ignoring the possibility of multimodal equipment, APCO severely restricts the ability of users to realize the benefits of state-of-the-art technology. Just as the Commission would not explicitly require that one specific technology be employed to meet a narrowband channel plan, it should not do so indirectly by endorsing APCO's artificially narrow definition of interoperability.

6. Intermodulation. APCO suggests that, as the number of channels is increased, the potential for intermodulation -- an interference effect -- increases. This problem, however, will also yield to common sense engineering solutions, such as the designing of appropriate filters and receivers and improved site management procedures. Such problems are manageable and should be viewed as an acceptable price to pay for the significant number of new channels that would be created with 5 kHz channelization.
7. Associated devices. APCO asserts, again without support, that associated devices, such as antenna duplexing schemes, have reached the limits of their capacity; therefore, new channels will not necessarily be useable. Even if this were true -- which it is not -- the argument would apply not only to narrowband systems but to APCO's favored 12.5 kHz technology as well. In reality, this point is nothing but an argument for maintenance of the status quo. Most importantly, the present limits in associated devices can be easily surmounted with logical, commonplace solutions.

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In its March 21, 1995, ex parte filing, APCO submitted a position paper citing three reasons for opposing a one-step migration process to narrowband channelization. As with its earlier submissions, APCO's reasoning is seriously flawed.

1. Project 25. Project 25's adoption of an interim 12.5 kHz standard is more the result of inopportune timing than evidence of the inherent wisdom of a two-step migration process. The Project 25 process began over five years ago, at a time when evidence of the viability of narrowband technology was not as solid as it is today. While a two-step migration may have made sense at that time -- and was indeed contemplated by the refarming NPRM -- the facts have changed dramatically since then. Narrowband technology, such as 5 kHz RZ<sup>®</sup> SSB, is viable, as participants in Project 25 are increasingly becoming aware.

APCO's claim that "a large number of major manufacturers are in agreement" that a two-step process is necessary merely reflects the fact that (1) manufacturers generally favor selling two generations of equipment, rather than one; and (2) many manufacturers have not yet developed a viable narrowband system and, thus, naturally seek to delay the transition until they can catch up to their competitors. APCO offers no explanation as to why it endorses the entirely self-serving views of these manufacturers. The evidence in the record of this proceeding clearly shows a growing consensus supporting the viability of narrowband technology, which should obviate the need to require users to bear the expense and complication of a two-step transition.

2. Federal Government. The fact that the Federal Government has adopted a 12.5 kHz channelization scheme does not provide a rationale for adopting a two-step migration process. Following APCO's logic, the Commission should not even adopt the second step of the two-step migration, so as to ensure the "uniform standard" with the Federal Government that APCO maintains is of such importance.

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Moreover, if the Commission were to adopt a narrowband channelization scheme in one step, the Federal Government might well decide to move to narrowband channelization as well. Indeed, during the RZ<sup>®</sup> SSB demonstration held in Washington, D.C., several representatives from NTIA, the FBI, DEA, and Treasury Department observed the operation of the RZ<sup>®</sup> SSB system, and all expressed keen interest in how soon RZ<sup>®</sup> SSB-based equipment would be commercially available.

3. Graceful migration. APCO asserts that "no equipment designed for any very narrowband technology . . . is compatible with existing equipment." Therefore, APCO asserts, cash-strapped public safety organizations will have to do entire system change-outs at one time, rather than gradually migrating to compatible 12.5 kHz technology.

APCO's assertions in this regard are simply not accurate. Equipment embodying narrowband technology, such as 5 kHz RZ<sup>®</sup> SSB, can be made compatible with existing equipment, e.g., by using multimodal equipment during the transition period. If the Commission adopts a narrowband channelization scheme with a reasonable transition time, the marketplace will undoubtedly demand, and manufacturers will supply, multimodal radios embodying existing and narrowband technologies. Public agencies could continue normal procurement practices, buying multimodal radios to replace retired equipment, thus avoiding the baseless, "nightmare scenario" that APCO has painted.

Such a shift would make the migration process much more "graceful" than the two-step process that APCO advocates. To begin with, the problem of "backwards compatibility" would be resolved in one generation of equipment, and half the time, whereas a two-step process draws this out well into the next century. Second, a one-step migration process spares the user the necessity of having to buy equipment twice to comply with the interim and the final channelization schemes. Cash-strapped public safety agencies would likely receive a far greater monetary benefit with a one-step process.

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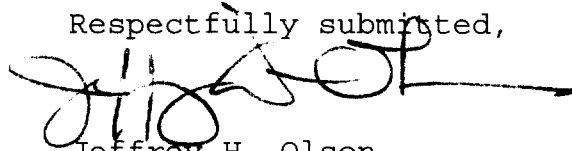
In short, APCO has not provided any reason for delaying or complicating the transition to a narrowband channelization plan. The fears expressed by APCO are refuted by the undisputed evidence in the record of this proceeding.

NTT has demonstrated that RZ<sup>®</sup> SSB technology is capable of meeting the various user demands identified by APCO's own Project 25 process. The fact that RZ<sup>®</sup> SSB-based systems are not commercially available today is solely the result of the fact that, until the Commission acts in this proceeding, little incentive exists for manufacturers to engage in the very costly process of developing and manufacturing a full line of systems and components.

NTT has, for decades, worked closely with manufacturers to bring to market products based on new technologies developed by its extensive research and development division. Based on this experience, NTT is convinced that radio equipment embodying 5 kHz RZ<sup>®</sup> SSB technology -- including hand-held units -- can be available in commercial quantities at affordable prices within the next 3 years. Moreover, of the several manufacturers that recently have approached NTT regarding the licensing of RZ<sup>®</sup> SSB technology, not one has expressed concern regarding the feasibility of developing a full range of RZ<sup>®</sup> SSB-based equipment.

It is not at all clear why APCO continues to cling to a position that has been thoroughly undermined by subsequent developments. What is clear is that there is simply no rational reason for the Commission to endorse the timid and unfounded approach proposed by APCO. The Commission can and should adopt a rapid, one-step transition to 5 kHz channel spacing.

Respectfully submitted,



Jeffrey H. Olson  
Paul J. Kollmer  
Diane C. Gaylor  
Attorneys for  
Nippon Telegraph  
& Telephone Corporation

cc: See attached list

SERVICE LIST

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Legal Advisor to Commissioner Quello

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Senior Legal Advisor to Commissioner Barrett

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Kathryn Hosford, Special Assistant  
Land Mobile and Public Safety Services

Richard Smith, Chief  
Office of Engineering and Technology

Dr. Thomas Stanley, Chief Engineer  
Office of Plans and Policy

Robert M. Gurss, Esq.  
Attorney for APCO



## APPENDIX A

**SCL/Midland Fax Letter**

March 22, 1995

Mr. Paul Kollmer, Esq.  
Paul, Weiss, Rifkind, Wharton, Garrison  
Attorneys at Law  
1615 L Street NW, Suite 1300  
Washington, DC 20036-5694

Dear Paul,

Thank you for the opportunity, you afforded me in Denver during the week of March 12, 1995 to participate in NTT-America's RZ-SSB demonstrations. I was intrigued with this narrow band digital technology when presented to the APCO Project 25 steering board during late January 1995. SCL/Midland is preparing our rollout plan for next cycle technology which must provide extraordinary spectral efficiency to meet the goals of the Federal Communications Commission and the user. My listening experience with voice communications through the RZ-SSB transceiver (and peripherals) and observation of fax and 9.6kb text data through the same mobile radio confirms our continuing interest in RZ-SSB technology.

I am presently preparing a briefing paper for SCL/Midland senior management based on the RZ-SSB presentation material and the demonstration to firm up the next step in exploring this technology to serve our current and prospective customers. I specialize in the Public Service market with special emphasis on Public Safety and view this technology as the a "cutting edge" driver for spectrally efficient narrow band RF communications. I had the opportunity to be with several users during the demonstration including those close to APCO, Project 25. I sensed very keen interest in the practical demonstration of what might be the baseline for APCO, Project 25 phase II.

I trust that current and prospective PMR users will be aware of this revolutionary digital communications access method and will encourage NTT to bring subscriber and infrastructure products to this anxious community.

Sincerely,

Joe Gallelli  
Sr. Manager - Public Safety Systems



March 22, 1995

Mr. Paul J. Kollmer  
Paul, Weiss, Rifkind Wharton & Garrison Attorney's at Law  
1615 L Street N.W. Suite 1300  
Washington, D.C. 20036-5694

Dear Paul,

Thank you for organizing the demonstration of N.T.T.'s R.Z.-SSB Technology in Denver. This proved to be very successful. R.Z.-SSB is here, with audio quality equal to that of current FM technologies.

Maxon, supports the efforts of the Federal Communication Commission to promote Spectral efficiency without placing undue burden on the manufacturers involved.

The 5kHz technologies either developed or emerging such as A.C.S.S.B, Linear modulation and R.Z.-SSB, already fall within the emission mask for the 12.5kHz channel spacings as proposed for the Part 88 proceeding. We feel that technologies that fit within our supported emission mask should not be singularly restricted to F.M. uses, and that narrow band operations should not be limited to 200-222MHz. Many applications exist under 47CFR part 22, 74, 80, 87, and 90 (part 88), that would be directly applicable to promoting spectrum efficiency, by use of narrow band technology. 5kHz technologies could also be utilized under Parts 15, 94, 95, and 97, to some extent.

As per the copy of our letter to the commission, publish the least restrictive emission mask and let the manufacturers and technology advances strive to place the most information in the allotted bandwidth. This helps to maintain a level playing field in the industry.

Sincerely,

A handwritten signature in black ink, appearing to read "Roger R. Bisby". The signature is stylized with large, flowing loops.

Roger R. Bisby  
Staff Engineer

cc: Dan Devling

LMR • Paging • SMR • Data

Maxon America, Inc. • 10828 NW Air World Drive  
Kansas City, Missouri 64153 • Phone: 816/891-6320 • Fax: 816/891-8815

## STANILITE PACIFIC LTD

1610 West Street, Suite 209 \* Annapolis, Maryland 21401 USA

Telephone: (410) 263-2481, Fax: (410) 263-8760

March 29, 1995

Mr. Paul Coltner  
NTT America  
1615 L Street, NW  
Washington, DC 20036-5694

Dear Mr. Coltner,

I would like to thank you for the presentation on the 5 kHz RZSSB that you conducted at the Denver APCO conference. The overall presentation which was conducted by NTT in the moving van was interesting.

As I informed you during the demonstration, I have been tracking the RZSSB technology for the past few years. The audio seemed to have good clarity within the 5 KHz established band width. One to three watt station from the hotel and within a driving range of one to three miles was adequate for listening over the air to the quality of the voice of which I felt comfortable as far as clarity on an audio recognition.

I feel, to further qualify this technology, that more extensive testing must be addressed to determine the over capability of the 5 KHz RZSSB. I feel with additional testing and issues to be resolved, that Stanilite Electronics Ltd. would have an interest in addressing a 5 KHz RZSSB technology for product development in the near future.

If I may be of further service, please feel free to contact me or fax me at the above numbers.

Regards,



Dr. John Gregory  
Chief Scientist, Stanilite

cc: MS/DR.J. File  
Stanilite MB/USA Disk File

PCI43.mbl



**BY FAX & LETTER**

**Standard Communications Corporation**  
P.O. Box 92151  
Los Angeles, CA. 90009-2151

March 23, 1995

Paul J. Kollmer  
1615 L. Street NW  
Washington, D.C. 20036-5694

Dear Paul:

During the week of March 13th, I participated in a live demonstration of N.T.T.'s RZ @ SSB in Denver Colorado.

Based on more than 15 years of personal experience in the Land Mobile Industry, the technology presented performed well as a developmental device.

As a Product Manager for a radio manufacturer, RZ @ SSB could address several issues for my employer, our customers and the dispatch market that they focus on. The demonstration exhibited that analog voice, G3 fax and data could be supported in a narrow band configuration.

If I may answer additional questions, you may reach me at (310) 532-5300 ext 326

Sincerely,

Doug Chapman  
Product Manager

djc

## APPENDIX B

# Los Angeles Police Department

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April 12, 1995

Paul J. Kollmer, Esq.  
Paul Weiss Rifkind et al.  
1615 L Street, N.W.  
Washington, D.C. 20036

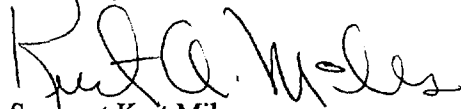
Dear Mr. Kollmer:

I attended NTT America's demonstration of its prototype RZ SSB 5 kHz mobil radio unit in Denver, Colorado in mid-March. I was attending the APCO Western Regional Convention in my capacity as the Officer In Charge of the Radio Technology Unit, for the Los Angeles Police Department.

I thought the demonstration of the 5 kHz RZ SSB mobil unit was impressive. I thought the quality of the analog voice over the mobil unit was very good. The quality of the G3 facsimile sent over the RZ SSB 5 kHz channel was excellent.

Based on my experience at the demonstration, I believe that 5 kHz technology appears to be a viable narrow band technology. The Los Angeles Police Department, as with many police agencies across the nation, is looking to the narrow band technology as a solution for our overburdened radio system. This coupled with the expected refarming issue currently being addressed by APCO, clearly demonstrates that narrow band technology is the way of the future. Thank you again for the most informative demonstration and I look forward to seeing future developments of your 5 kHz RZ SSB mobil radio system.

Very truly yours,



Sergeant Kurt Miles  
Officer In Charge, Radio Technology Unit  
Los Angeles Police Department  
Emergency Command Control Communications  
System Division  
250 E. First Street  
Los Angeles, California, 90012



STATE OF NEVADA  
DEPARTMENT OF  
MOTOR VEHICLES AND PUBLIC SAFETY  
NEVADA HIGHWAY PATROL  
555 Wright Way  
Carson City, Nevada 89711-0525  
(702) 687-5300

BOB MILLER  
Governor

JAMES P. WELLER  
Director

April 7, 1995

Paul J. Kollmer, Esq.  
Paul Weiss Rifkind et. al.  
1615 L Street, N.W.  
Washington, D.C. 20036

Reference: **RZ SSB TECHNOLOGY**

Dear Mr Kollmer:

I attended the demonstration of NTT America's RZ SSB 5 KHZ technology in Denver last month while at the APCO Western Regional Conference. I attended the show in my capacity as Communications Manager for the Nevada Highway Patrol.

I think the demonstration was very impressive. The quality of the analog voice was excellent. The quality of the FAX sent over the using this technology was better than the land-line fax used in my office!

We in law enforcement embrace this new technology with vigor. Often, we find criminal elements in our society better equipped than us and every advantage technology offers greatly improves the safety of our officers and the public they are sworn to protect.

Sincerely,

A handwritten signature in black ink, appearing to read "Mel Pennington", with a long horizontal line extending to the right.

Mel Pennington  
Communications Manager  
Nevada Highway Patrol



# City of Berkeley

Department of Public Works  
1326 Allston Way  
Berkeley, California 94702  
(510) 644-6218



April 5, 1995

Paul J. Kollmer, Esq.  
Paul Weiss Rifkind et al.  
1615 L Street, N.W.  
Washington, D.C. 20036

Re: RZ SSB Technology

Dear Mr. Kollmer:

I attended NTT America's demonstration of its prototype RZ SSB 5 khz. mobile radio unit in Denver, Colorado in mid-March in conjunction with the APCO Western Regional Show. I attended the show in my capacity as Communications Technician Supervisor, for The City of Berkeley, California.

I thought the demonstration of the 5 khz. RZ SSB mobile unit was impressive. I thought the quality of the analog voice over the mobile unit was outstanding. There were very few errors in the data transmitted over the RZ SSB transceiver. The quality of the G3 facsimile sent over the RZ SSB 5 khz. channel was excellent.

Based on my experience at the demonstration, I believe that 5 khz. RZ SSB technology appears to be a viable narrowband technology. I could see it replacing narrowband FM in many applications in the future. It is my opinion that this technology deserves further consideration and development to meet the need for a high-quality, yet spectrum efficient radio transmission and reception method.

Sincerely,

Russell Stein  
Communications Technician Supervisor



CITY OF  
MESA

April 10, 1995

Paul J. Kollmer, Esq.  
Paul Weiss Rifkind et al.  
1615 L Street, N. W.  
Washington, D. C. 20036

Re: RZ SSB Technology

Dear Mr. Kollmer:

I was invited to attend the demonstration of the NTT America's prototype RZ SSB 5 kHz mobile radio at the APCO Western Regional conference in Denver, Colorado in mid-March. I was very impressed with the performance of the system.

The quality of the analog voice was excellent and the system's ability to transmit data was very impressive. The quality of the G3 facsimile was excellent, even when using the non-diversity receive mode.

The 5 kHz RZ SSB technology appears to be a viable narrowband technology based on my observations at the demonstration.

Sincerely,

Les Jones  
Communications Supervisor

Communications Division

161 East 6th Place • P.O. Box 1466 • Mesa, Arizona 85211-1466 • (602) 644-3166 • FAX: (602) 644-3173

printed on recycled paper



Phone (202) 331-9495  
Fax (202) 331-7639

Paul J. Kollmer, Esq.  
Paul Weiss Rifkind et al.  
1615 L Street, N.W.  
Washington, D.C. 20036

Re: RZ SSB Technology

Dear Mr. Kollmer:

I attended NTT America's demonstration of its prototype RZ SSB 5 kHz mobile radio unit in Washington, D.C. in February. I attended the show in my capacity as an Engineer with Utilities Telecommunications.

I thought the demonstration of the 5 kHz RZ SSB mobile unit was impressive. I thought the quality of the analog voice over the mobile unit was excellent. There were very few errors in the data transmitted over the RZ SSB transceiver. The quality of the G3 facsimile sent over the RZ SSB 5 kHz channel was excellent.

Based on my experience at the demonstration, I believe that 5 kHz RZ SSB technology appears to be a viable narrowband technology.

Sincerely,

A handwritten signature in dark ink, appearing to read "Peter M. Zernik", is written over the typed name.

Peter M. Zernik  
Electrical Engineer  
Telecommunication Projects

## APPENDIX C

24 April 1995

Mr. Paul Kollmer, Esq.  
Paul, Weiss, Rifkind, Wharton & Garrison  
1615 L. Street N.W., Suite 1300  
Washington, D.C. 20036

Reference: NTT RZ-SSB  
Subject: TIA Technology Compatibility Committee

Dear Sir:

As a consequence of participating in your February 1995, RZ-SSB technology demonstration, and upon a review of the published information on RZ-SSB, it is my opinion that RZ-SSB is a viable bandwidth efficient linear technology for use in the land mobile arena.

Anticipating that the Commission is likely to mandate narrowbanding in its spectrum refarming efforts, it is incumbent upon the WG 8.8 Technology Compatibility Committee to anticipate the insertion of all viable candidate linear and exponential narrowband technologies.

This correspondence is to formally request NTT's regular participation in the TIA TR-8 WG 8.8 Technology Compatibility Committee meetings and proceedings specifically to provide WG 8.8 with all relevant and necessary technology information concerning NTT's RZ-SSB bandwidth efficient linear modulation implementation.

The next WG 8.8 meeting is scheduled for 12 Noon on 27 April 1995 at the Best Western Mardi Gras Hotel, Las Vegas, NV. I have asked Mr. David Brown of EGE, the WG 8.8 Co-Chairman to fax you a copy of the Las Vegas meeting notice.

The timetable for the completion of the WG 8.8 effort has not yet been established. A definitive timetable will be formulated when the Commission's decisions concerning mandating the use of narrowband/bandwidth efficient technology and at what channel spacing is publicly announced.

Very truly yours,

  
Dr. Gregory M. Stone  
Co-Chairman, TIA TR-8, Technology Compatibility WG8.8

## APPENDIX D

## Technology

### NTT SEEKS MANUFACTURING PARTNER FOR SINGLE SIDE-BAND TECHNOLOGY

Hoping to attract a U.S. manufacturing partner for its new dispatch technology, Nippon Telegraph and Telephone Corp. (NTT) conducted a series of land mobile radio demonstrations in Washington, D.C., using single side-band (SSB) technology for transmitting voice, data and fax signals.

"We're here to try and stimulate interest in what we believe is an extremely flexible, spectrum-efficient technology that--with the right U.S. manufacturing partner--will take off...as carriers begin to try to do more in smaller bandwidths," said Kazuhiro Daikoku, NTT senior manager for new technology business development. Daikoku designed what the Japanese company calls the RZ SSB mobile unit.

The technology, which uses a single 5 kHz channel, combines SSB technology and phase-modulation reception. The former provides a narrowband signal, and the latter provides resistance against noise, fading and interference, NTT said.

"The biggest challenges we face are persuading regulators they can go to the most spectrum-efficient technologies to stimulate the market for our product," he added, referring to the FCC's pending refarming proceeding. The commission is expected to set a schedule in the next few months requiring carriers to use smaller bandwidths in their systems (LMRN, Oct. 28, 1994, p. 4).

NTT said the RZ SSB can employ time division duplexing to provide two-way data services "when used with a relatively low-bit-rate coder." Maximum data-handling capabilities are 19.2 kilobits per second (kbps), while group three fax transmission can reach 9.6 kbps.

RZ SSB units also can provide "seamless interface with signals coming from conventional telephone lines without any additional equipment," NTT said.

### ...One Trade Group Plays Matchmaker

American Mobile Telecommunications Association President Alan Shark was one of about 30 people who attended the demonstration, which featured a RZ SSB unit-equipped van that received voice, data and fax transmissions while driving around the Washington area.

"I think there's a nice opportunity for a certain type of manufacturer here," Shark said. "I was impressed with what I saw, and I sent on the information to some of our members...to let them know about the opportunities. And now they can take it from here." Shark declined to identify which companies he considered prospective matches with NTT.



Derick Rill

Sincerely,

*The Editors*

Derick Rill, Editor  
Mike Maynard, Contributing Editor  
Paul Shultz, Managing Editor



Paul Shultz

P.S. Now your company can receive the full text of any of our newsletters via e-mail FREE for 30 days. Call Mike O'Neill for details 301/340-7788, ext. 3710.

### Phillips Wireless Group



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